

SAFETY DATA SHEET
Fluorofab® PTFE COATED ARAMID FABRICS

SECTION 1 IDENTIFICATION**1.1 Product Identifier**

Product name: Fluorofab® Kev 5, Kev 5 PR
 Kev 10
 K50-600
 30-89K, 30-95K

Synonyms: PTFE Coated Woven Aramid Fabric

1.2 Relevant identified use of the product

Use of the Product: Industrial applications where high chemical and temperature resistance and excellent release is required.

1.3 Details of the supplier of the safety data sheet

Company: Green Belting Industries Limited
 381 Ambassador Drive
 Mississauga
 ON L5T 2J3
 Canada

Telephone: +1 905 564 6712 (09:00 to 17:00 Eastern Standard Time)

Telefax: +1 905 564 6709

E-mail address: sds-support@greenbelting.com

European Union Contact: Biscor Limited
 8 Kingsmark Freeway
 Bradford
 West Yorkshire
 BD12 7HW
 United Kingdom

Telephone: +44 (0)1274 694684 (09:00 to 17:00 UTC/GMT)

Telefax: +44 (0)1274 694685

1.4 Emergency Telephone Number

North American Emergency Telephone Number: +1 905 564 6712 Available between the hours 09:00 to 17:00 (EST)

European Union Emergency Telephone Number: +44 (0)1274 699425 Available between the hours 09:00 to 17:00 (UTC/GMT)

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SECTION 2 HAZARD IDENTIFICATION**2.1 Classification of the Product**

European Communities (EC):	Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.
USA:	Not classified as dangerous according to Directive 67/548/EEC.
Canada:	Not a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Standard.
	Not a controlled product under WHMIS.

2.2. Label elements

Symbol:	None
Signal Word:	N/A
Hazard Statement(s):	N/A
Precautionary Statement:	P261 – Avoid breathing any fume or dust that may be generated P264 – Wash hands thoroughly after handling.

2.3. Other hazards

Use of this product is not normally considered hazardous, however material dust caused by cutting, sawing or sanding may cause eye or skin irritation. Processing at temperatures higher than 300°C can cause the evolution of particulate matter which can cause “polymer fume fever” which is a temporary condition that can cause flu-like symptoms and eye and respiratory irritation. The smoking of tobacco contaminated with PTFE can cause this condition. Processing at temperatures higher than 400°C will result in thermal decomposition of fluorinated thermoplastics and may release carbonyl fluoride which hydrolyses to hydrogen fluoride and carbon dioxide by reacting with moisture in the air. In all cases avoid exposure, move the individual to fresh air and consult a physician if severe.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Nature of the Mixture: PTFE coated woven aramid fabric

3.1 Substances

Not Applicable

3.2 Mixtures

Ingredient Name	CAS Number	% by Weight	Exposure Limits		Symbol	Risk Phrases
			OSHA PEL	ACGIH TLV		
Polytetrafluoroethylene	9002-84-0	36 - 61	N/A	N/A	None	None
Aramid Fibre; Poly(terephthaloyl chloride/p-phenylenediamine) fibre	26125-61-1	39 - 64	15 mg/m ³ (total) 5mg/m ³ (respirable))	10mg/m ³ (inhalable) 5mg/m ³ (respirable)	None	None

The above product(s) are defined under the European Union’s REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulation as articles, and as such are exempt from the material safety data sheet provisions of 29 CFR 1910.1200(G) .

None of the product components are intentionally released during their use when used as intended and in accordance with recommended specifications and parameters.

This product is REACH compliant and does not contain REACH SVHCs (Substances of Very High Concern) materials and is considered non-hazardous when used as intended and in accordance with recommended specifications and parameters.

For full text of the R-phrases mentioned in this Section, see Section 16. For full text of the H-statements mentioned in this Section, see Section 16.

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SECTION 4 FIRST AID MEASURES**4.1 Description of First Aid Measures**

General Advice:	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation:	N/A for material as supplied at room temperature and used as intended and in accordance with recommended specifications and parameters. Processing at high temperature may generate fumes which can cause “polymer fume fever” leading to flu-like symptoms. Remove to fresh air and consult a physician if severe.
Skin Contact:	Not normally considered hazardous, however material dust caused by cutting, sawing or sanding may cause skin irritation. Wash with plenty of soap and water. If irritation persists get medical attention.
Eye Contact:	Material dust caused by cutting, sawing or sanding may cause eye irritation. Wash with plenty of soap and water. If irritation persists get medical attention.
Ingestion:	If swallowed get medical advice. Do not induce vomiting unless instructed to do so by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:	Local irritation. The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Symptoms may be delayed. Repeated episodes of polymer fume fever may result in persistent lung effects. Inhalation of decomposition products from overheating may cause lung irritation or shortness of breath.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.
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SECTION 5 FIRE FIGHTING MEASURES**5.1 Extinguishing Media**

Suitable extinguishing media:	Water spray, Carbon dioxide (CO ₂), Foam, Dry Chemical
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5.2 Special hazards arising from the product

Specific hazards during fire-fighting:	Hazardous thermal decomposition products. Hydrogen fluoride, fluorinated compounds, carbon oxides, perfluoroisobutylene, tetrafluoroethylene, hexafluoropropylene and trifluoromethane. Exposure to decomposition products can be a hazard to health.
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SECTION 5 FIRE FIGHTING MEASURES

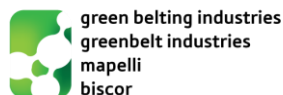
5.3 Advice for firefighters	
Special protective equipment for firefighters:	Wear self-contained breathing apparatus and protective suit. Wear neoprene gloves during cleaning up work after a fire.
Further information:	Protect from hydrogen fluoride fumes which react with water to form hydrofluoric acid.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures	
Personal precautions:	For solid product none required. For dusts and fibers generated during fabrication use protective equipment to prevent the contamination of skin, eyes, and clothing.
6.2 Environmental Precautions	
Environmental Precautions	N/A - solid product
6.3 Methods and materials for containment and cleaning up	
For solid product collect with hands broom and shovel and place in non-hazardous waste collection container for disposal. For dusts and fibers generated during fabrication vacuum up and containerise.	
6.4 Reference to other sections	
For disposal instructions see section 13.	

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling	
Advice on safe handling:	Solid product which presents minimal hazards to personnel when handling in accordance with operating and storage recommendations. The primary health hazards associated with this product are the generation of dust during fabrication and the inhalation of thermal decomposition products when the product is subjected to temperatures greater than 300°C. Provide appropriate exhaust ventilation at places where dust or volatiles can be generated. Wash hands thoroughly before smoking as tobacco contaminated with PTFE can cause “polymer fume fever”.
Advice on protection against fire and explosion:	Dispose of in accordance with local regulations as a solid non-hazardous waste and avoid inappropriate disposal practices. Do not incinerate polytetrafluoroethylene (PTFE) waste. Provide appropriate exhaust ventilation at places where dust or volatiles can be generated.
7.2 Conditions for safe storage, including any incompatibilities	
Requirements for storage areas and containers:	No special precautions necessary, but recommend storing in a dry cool place and protecting from contamination.



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SECTION 7 HANDLING AND STORAGE

Advice on common storage:	No special restrictions on storage with other products. Keep away from tobacco products.
Storage temperature:	No special restrictions.
Other data:	Do not store in direct sunlight or in conditions of high humidity. Aramid fibres or fabric will be degraded by ultraviolet sunlight and discoloured by fluorescent lighting.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

In situations in confined spaces where the temperature of the polymer exceeds 500°F (260° C), thermal degradation products may be produced. Exposure limits for these products, which include perfluoroisobutylene, carbonyl fluoride and hydrogen fluoride, must not be exceeded.	perfluoroisobutylene	TLV TWA 10ppb	TLV STEL -	IDLH (NIOSH) -
	carbonyl fluoride	2ppm TWA	5ppm	-
	hydrogen fluoride	0.5ppm	2ppm ceiling	30ppm
In situations where high levels of airborne dust/glassfibres are present specified exposure limits must not be exceeded.		OSHA-PEL 5mg/m ³ – nuisance dust PEL (respirable dust fraction) 15mg/m ³ – 8 hour TWA (total dust fraction)	ACGIH-TLV 5mg/m ³ – 8 hour TWA (inhalable) 1 fiber/cm ³ – 8 hour TWA (respirable)	Other 3 x 10 ⁶ fibers/m ³ – 10 hour TWA (NIOSH)

8.2 Exposure Controls

Engineering measures:	If cutting, sawing or sanding of the product is necessary, to maintain exposures below recommended limits, a properly designed dust collection system is recommended at the operation source. Adequate ventilation must be provided when working with the product at elevated temperatures.
Eye protection:	Throughout basic product handling processes, and whenever handling materials containing fiberglass, safety glasses, goggles or face shields should be worn.
Hand protection:	Throughout basic product handling processes, leather or synthetic fibre gloves are recommended to minimize cuts and abrasions.
Skin and body	The wearing of a loose fitting long sleeved shirt that covers to the base of the neck

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protection: and long trousers is recommended to minimise exposure to fiberglass. Skin irritation from exposure to fiberglass is known to occur mostly at pressure points such as around the neck, wrist and waist.

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Hygiene measures: Handle in accordance with good industrial hygiene and safety practices. Wash hands immediately after handling the product and do not contaminate tobacco products. Be careful not to rub or scratch areas irritated from fiberglass exposure, as fibers may be forced into the skin. Wash off any fiberglass in contact with the skin, and consider the use of barrier creams which can minimise irritation. Always use vacuum equipment to remove fibers and dust from clothing and never use compressed air. Contaminated clothes should always be washed separately.

Respiratory protection: Not required for normal use of the product. In situations where high levels of airborne dust/glassfibers are present and which exceed permissible exposure limits, or irritation occurs, then a correctly fitting NIOSH/MHSA approved disposable dust respirator should be used. In situations in confined spaces where the temperature of the polymer exceeds 500°F (260° C), an air supplied respirator should be used. In situations where high levels of airborne dust/glassfibers or fume, use industrial hygiene monitoring to ensure that TLV or PEL values are not exceeded. Excessive exposure to thermal degradation products could result in delayed pulmonary edema and in some cases, and on very high exposure damage to the liver and kidneys. These substances may include perfluoroisobutylene (TLV = 10ppb), carbonyl fluoride (TLV = 2ppm TWA, 5ppm STEL), hydrogen fluoride (TLV = 2ppm ceiling, 0.5ppm TWA).

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties			
Appearance:	Light tan/yellow, various thicknesses	Upper/lower flammability or explosive limits:	N/A
Physical state:	Solid	Vapour pressure:	N/A
Odour:	Odourless	Vapour density:	N/A
Odour threshold:	N/A	Relative density:	N/D
pH:	N/A	Solubility(ies):	Insoluble
Melting point/freezing point:	N/A	Partition coefficient: n-octanol/water:	N/A
Initial boiling point and boiling range:	N/A	Auto-ignition temperature:	N/A
		Decomposition temperature:	572°F (300°C)

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Flash point:	N/A	Viscosity:	N/A
Evaporation rate:	N/A		
Flammability (solid, gas):	N/D		

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity:	Stable at normal ambient temperature and pressure
10.2 Chemical stability:	Product is chemically stable
10.3 Possible hazardous reactions:	Stable under recommended storage conditions
10.4 Conditions to avoid:	Avoid heating for prolonged periods above the recommended upper usage limit
10.5 Incompatible materials:	Alkali metals, Strong oxidizing agents, Halogenated compounds
10.6 Hazardous decomposition products:	May include: Fluorinated hydrocarbons, Carbonyl fluoride, Hydrogen fluoride, carbon oxides, perfluoroisobutylene, tetrafluoroethylene, hexafluoropropylene, trifluoromethane.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	Polytetrafluoroethylene LD50 / rat : > 11,280 mg/kg	Aramid Oral (ALD) / rat: > 7,600 mg/kg
Skin irritation	May cause skin irritation in susceptible persons. Polytetrafluoroethylene Human Classification: Not classified as irritant Result: No skin irritation	Polytetrafluoroethylene Rabbit Classification: Not classified as irritant Result: No skin irritation
Eye irritation	Mild eye irritation	
Sensitisation	Polytetrafluoroethylene Human Classification: Not a skin sensitizer. Result: Does not cause skin sensitization. Patch test on human volunteers did not demonstrate sensitization properties.	
Repeated dose toxicity	Polytetrafluoroethylene Oral - feed rat - no toxicologically significant effects were found.	

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Mutagenicity assessment	Polytetrafluoroethylene Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Carcinogenicity assessment	Polytetrafluoroethylene Not classifiable as a human carcinogen

SECTION 11 TOXICOLOGICAL INFORMATION

Toxicity to reproduction assessment	Polytetrafluoroethylene No toxicity to reproduction
STOT-Single exposure	No data available
STOT-Repeated exposure	No data available
Aspiration hazard	Not applicable

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity	Toxicity to fish (Polytetrafluoroethylene) - the substance is a polymer and is not expected to produce toxic effects. Aramid fibres are essentially non-biodegradable and do not leach material toxic to flora or fauna.
12.2 Persistence and degradability	no data available
12.3 Bio-accumulative potential	no data available
12.4 Mobility in soil	no data available
12.5. Results of PBT and vPvB assessment	no data available
12.6. Other adverse effects	
Additional ecological information	no data is available on the product itself.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	Where possible recycling is preferred to disposal or incineration. Dispose of in accordance with local regulations. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.
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SECTION 14 TRANSPORT INFORMATION

	14.1 UN Number	14.2 Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
DOT	Not Applicable	Not Applicable	Not Applicable	Not Applicable	None
ADR	Not Applicable	Not Applicable	Not Applicable	Not Applicable	None
IATA/ICAO	Not Applicable	Not Applicable	Not Applicable	Not Applicable	None
IMO/IMDG	Not Applicable	Not Applicable	Not Applicable	Not Applicable	None
14.6 Special precautions for user:		Not classified as dangerous in the meaning of transport.			
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:		Not applicable			

SECTION 15 REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****USA**

TSCA Status: All ingredients in the product are listed in the TSCA inventory

SARA Title III

Sec. 303/304: None
 Sec. 311/312: Not applicable
 Sec 313: Not applicable
 CERCLA RQ: Not applicable

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer of the reproductive system.

State Right-to-Know Lists: Massachusetts, New Jersey, Pennsylvania: This product does not contain any chemicals listed for state right to know purposes.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

**WHMIS Classification:
(for workplace exposures)** Not controlled

**New Substance
Notification Regulations:** All ingredients in this product are listed, as required, on Canada's Domestic Substances List (DSL).
NPRI Substances: Not applicable.

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EC Classification for the Substance/Preparation

Symbol:	This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
German Water Hazard Class	German Water Hazard Class WGK nwg. Non-water polluting substance.
Other regulations:	Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2 Chemical Safety Assessment

No data available

SECTION 16 OTHER INFORMATION

Text of R-phrases referred to in Section 3: N/A

Text of H-Statements referred to in section 3: N/A

Preparation Information:

Prepared by:	Green Belting Industries Limited www.greenbelting.com
Revision Date:	19 September 2013
Revision Summary:	Review of regulatory, hazard classification, exposure and toxicology data. No revisions to date.

Abbreviations and acronyms:

Section	Abbreviation	Description
2	CFR	Code of Federal Regulations
3	CAS	Chemical Abstracts Services
3	OSHA	Occupational Safety and Health Administration USA
3	ACGIH	American Conference of Governmental Industrial Hygienists
3	PEL	Permissible Exposure Limit
3	TLV	Threshold Limit Value
3	SVHC	Substances of Very High Concern
8	TWA	Time Weighted Average
8	STEL	Short-Term Exposure Limit
8	IDLH	Immediately Dangerous to Life or Health (NIOSH)
8	NIOSH	National Institute for Occupational Safety and Health
8	ppm	Parts per Million
8	ppb	Parts per Billion
11	LD ₅₀	"Lethal Dose, 50%" or median lethal dose (amount of substance required by body weight to kill 50% of the test population)
11	ALD	Approximate Lethal Dose
11	STOT	Specific Target Organ Toxicity



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12	PBT	Persistent, Bio-accumulative and Toxic
12	vPvB	Very Persistent and Very Bio-accumulative
14	DOT	Department of Transport
14	ADR	Agreement on Dangerous Goods
14	IATA	International Air Transport Association
14	ACAO	International Civil Aviation Organisation
14	IMO	International Maritime Organization
14	IMDG	International Maritime Dangerous Goods
14	TSCA	Toxic Substances Control Act
15	SARA	Superfund Amendments and Reauthorization Act
15	CERCLA RQ	Comprehensive Environmental Response Compensation and Liability Act
15	WGK	German Water Hazard Class
15	WHMIS	Workplace Hazardous Materials Information System

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.